

Utah Department of Transportation Traffic Management Division

May 2016

Monthly Report



2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 www.udottraffic.utah.gov



Mission of the Traffic Management Division

- To Support UDOT and the Department of Public Safety to Achieve Zero Fatalities.
- To Help Provide Reliable and Efficient Travel Throughout Utah.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

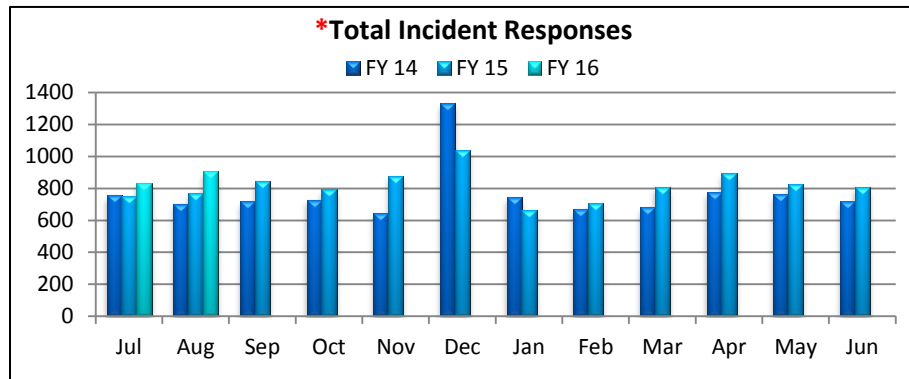
Field Devices Summary

Freeway PTZ Cameras	385	Freeway VMS	98
Arterial PTZ Cameras	470	Surface Street VMS	51
RWIS & Contracted Weather Cameras	214	Portable TOC VMS	7
Viewable Detection Cameras	59	Legacy Trucks Prohibited VMS	21
Total Cameras	1,128	Variable Speed Limit VMS	15
HAR (27 permanent/5 portable)	32	Chain-Up/Avalanche Warning Signs	21
RWIS	98	Total VMS	213
Ramp Meters	63	TMS	547
Express Lane Plazas	73	Traffic Signals	2,168

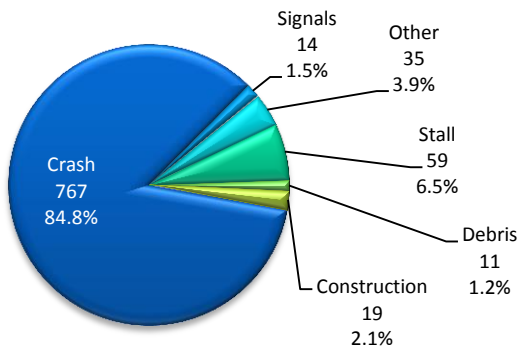
Operations Summary

VMS Messages Displayed	84,041	IMT Assists	2,344
Signal Timing Work Orders	28	Website Visitor Sessions	115,955
Signal Maintenance Work Orders	148	511 Calls	12,797
All New Work Orders	479	Weather Desk Calls	311
Incident Responses by the TOC	905	Ask CommuterLink Questions	107
Incident Duration Average Minutes	58	UDOT Traffic Followers and Re-tweets	443,612

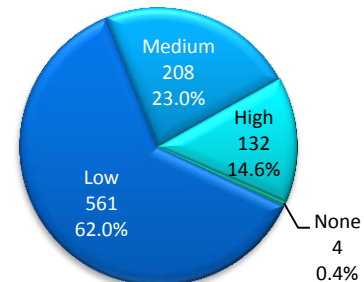
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.



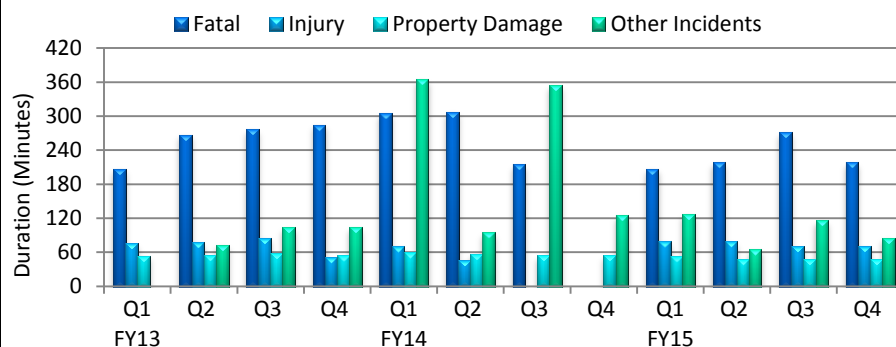
***Incidents By Type for August 2015**



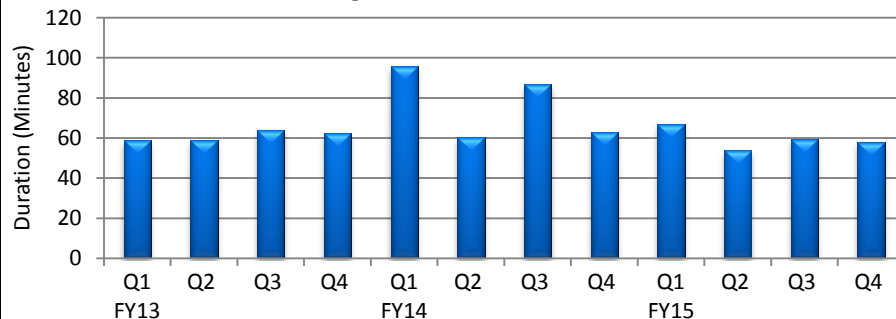
***Incidents by Severity for August 2015**



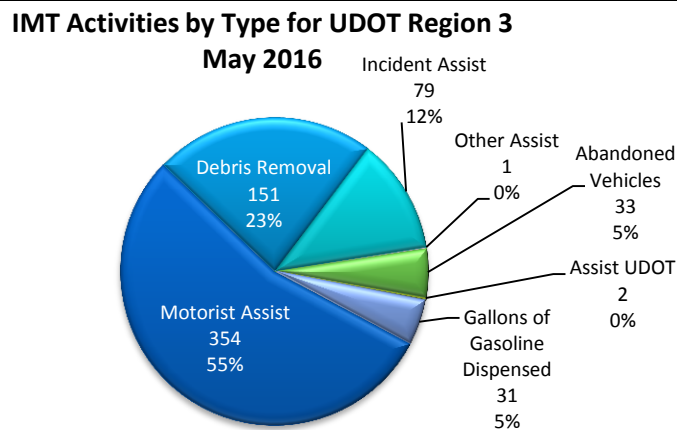
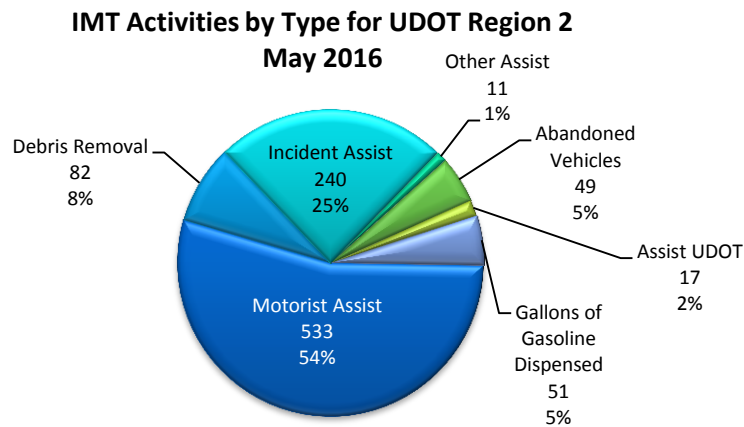
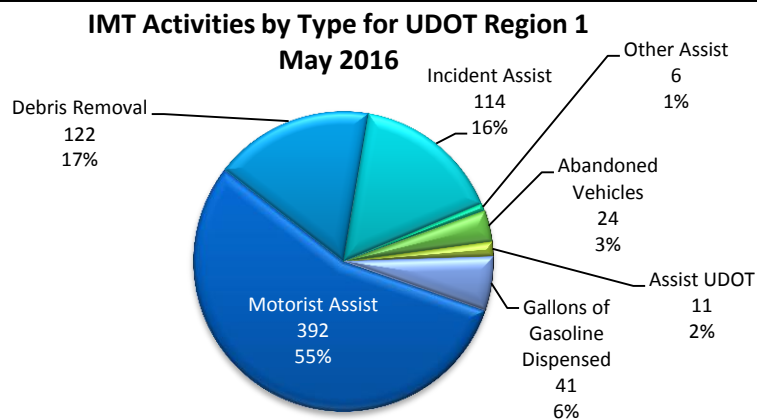
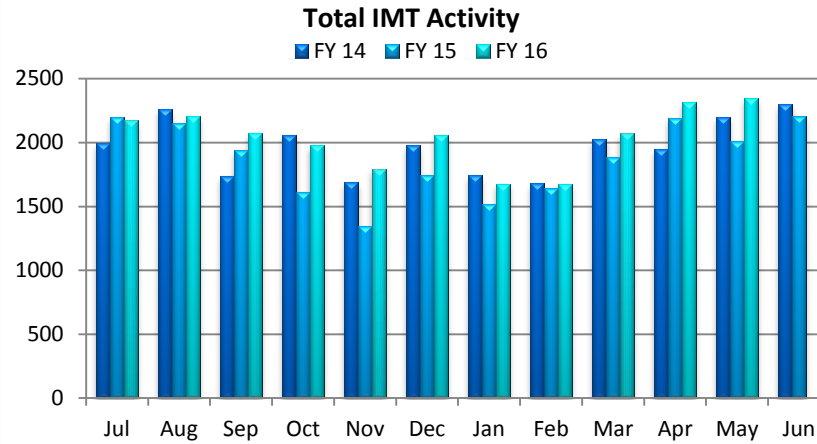
***Average Crash Duration**



***Average Duration of All Incidents**



Incident Management Team (IMT) Activities



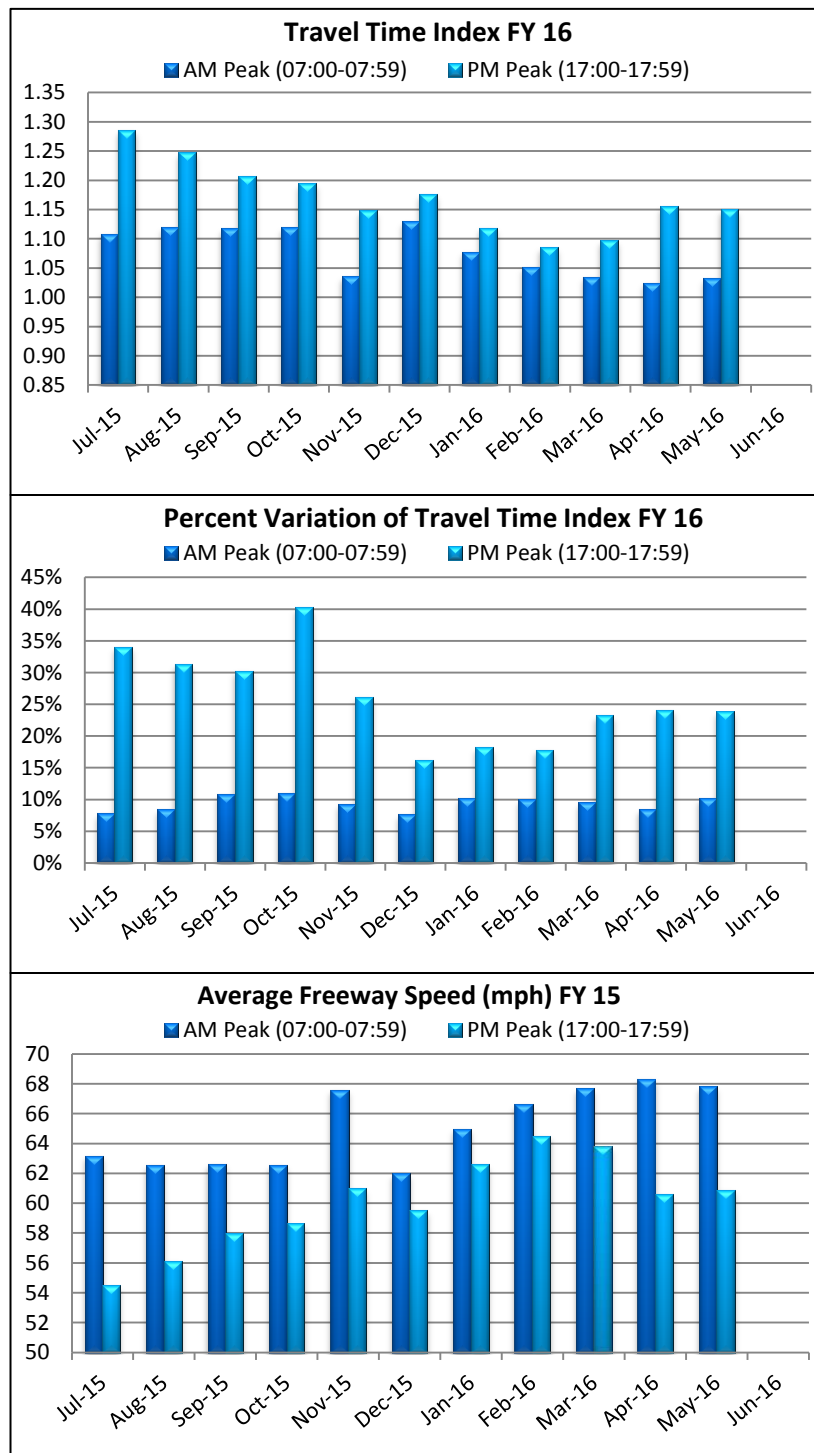
Freeway Traffic Level of Service

Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

Travel Time Index: This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

Percent Variation of Travel Time Index: The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

Average Freeway Speed: The freeway speed is weighted by volume.



Freeway Traffic Level of Service

Peak Travel Time Index by Segment for May 2016

(+) Direction (NB, EB, Clockwise)

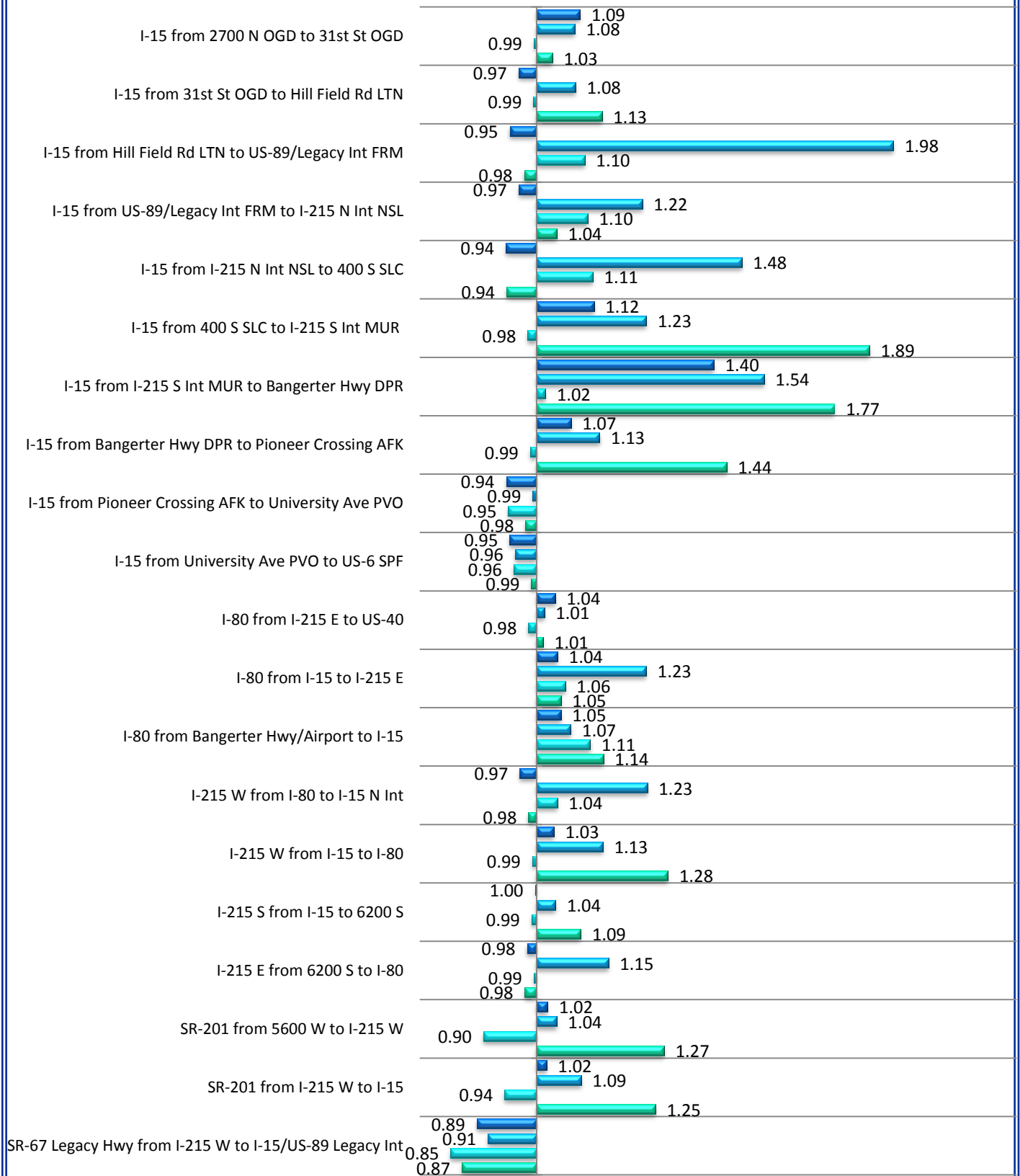
(-) Direction (SB, WB, Counter Clockwise)

■ AM Peak (07:00-07:59)

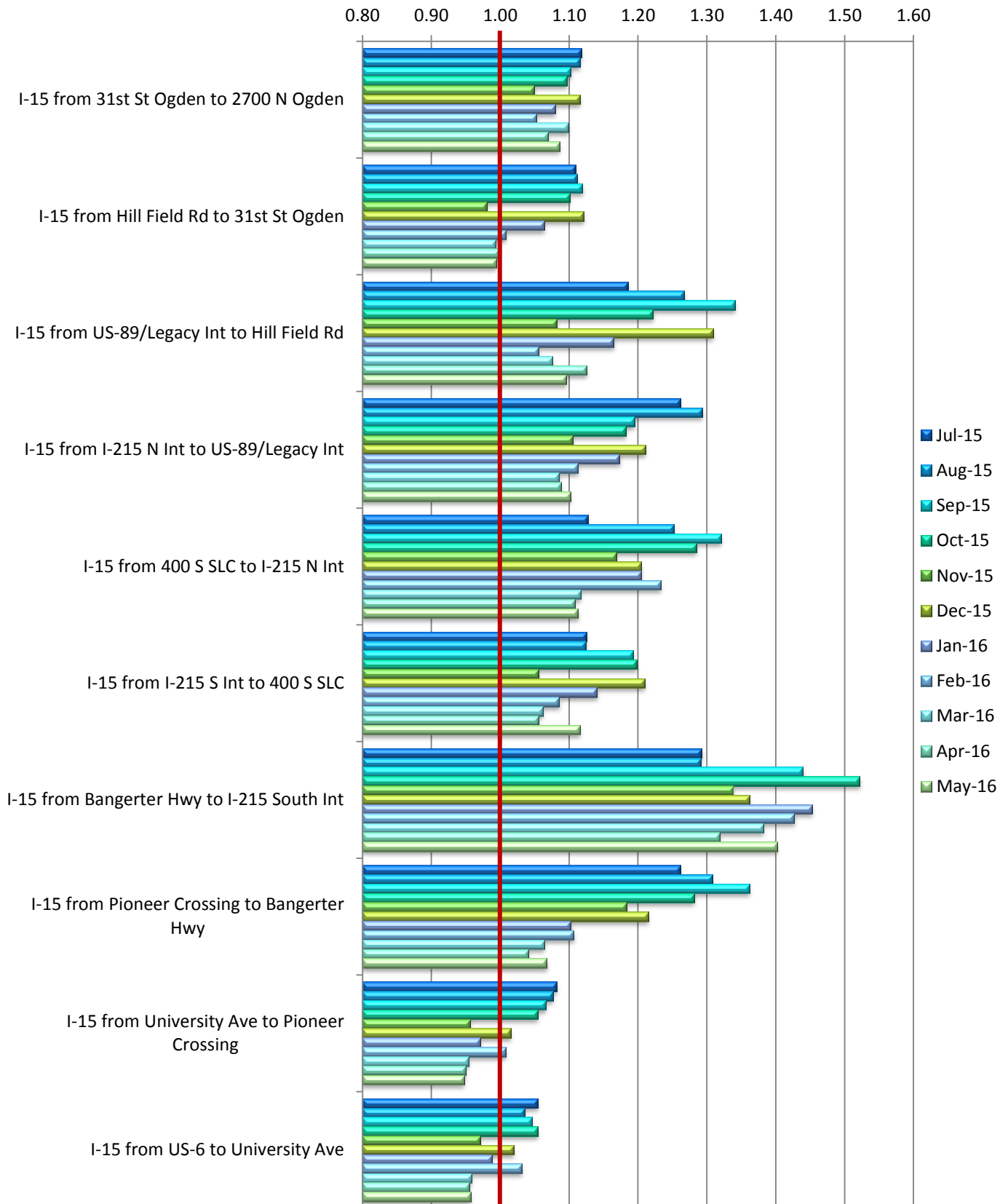
■ PM Peak (17:00-17:59)

■ AM Peak (07:00-07:59)

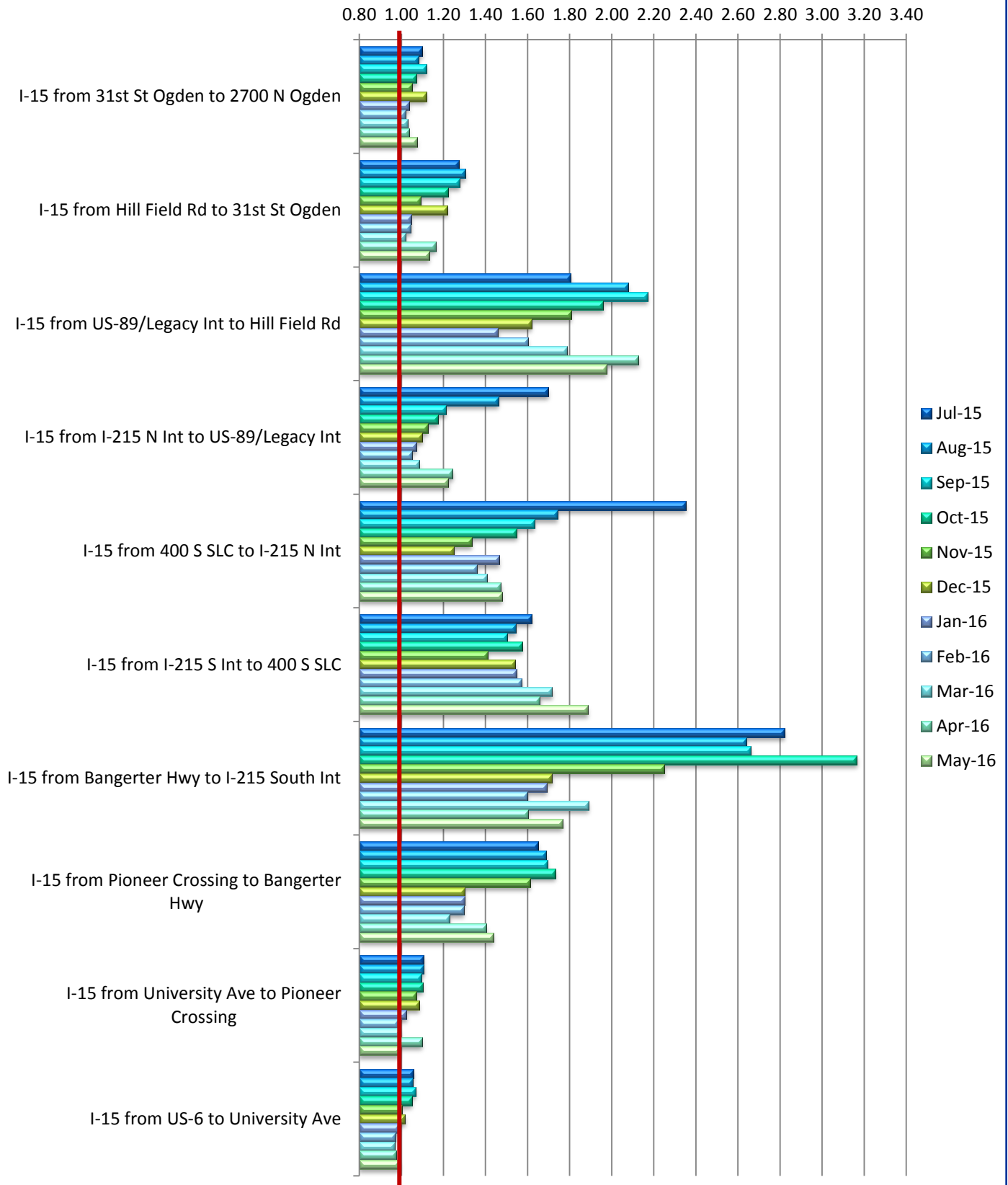
■ PM Peak (17:00-17:59)



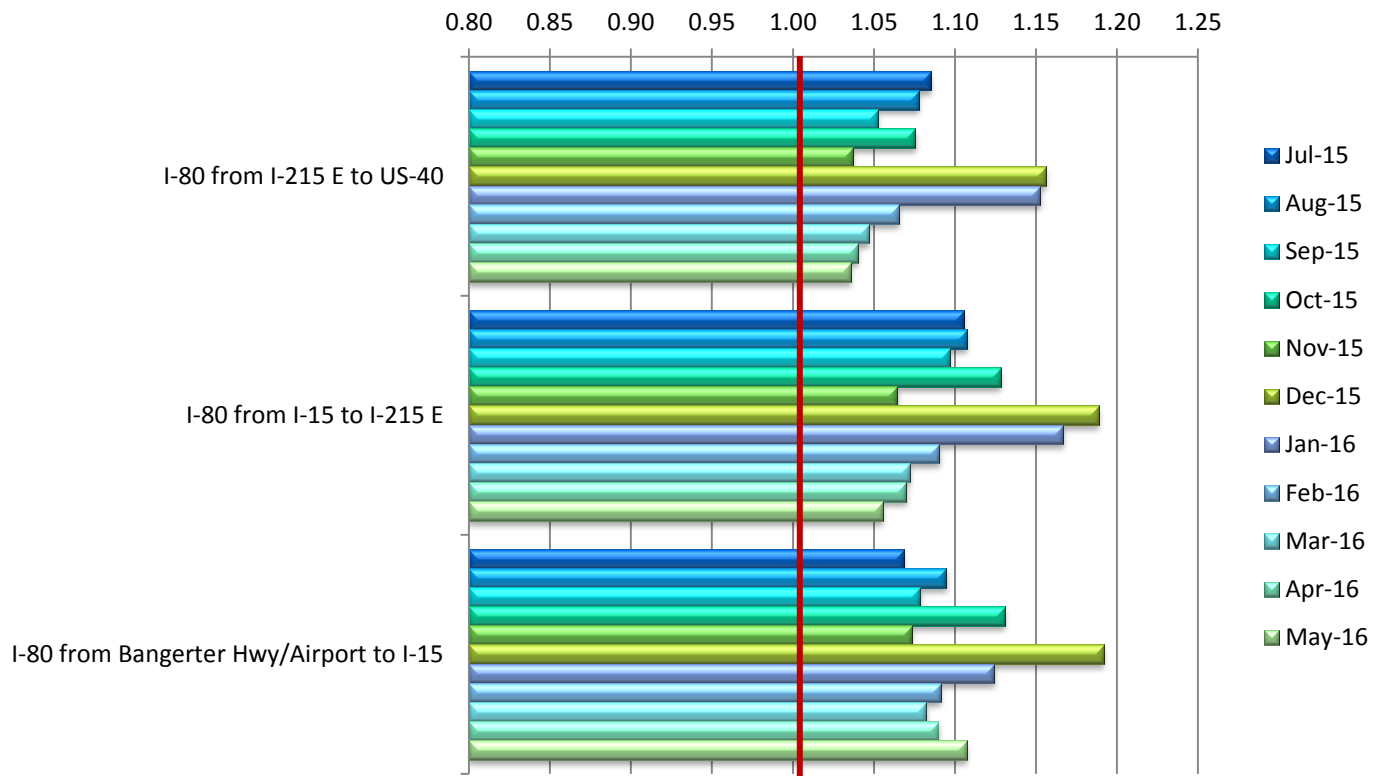
AM Peak Travel Time Index for I-15 FY 16



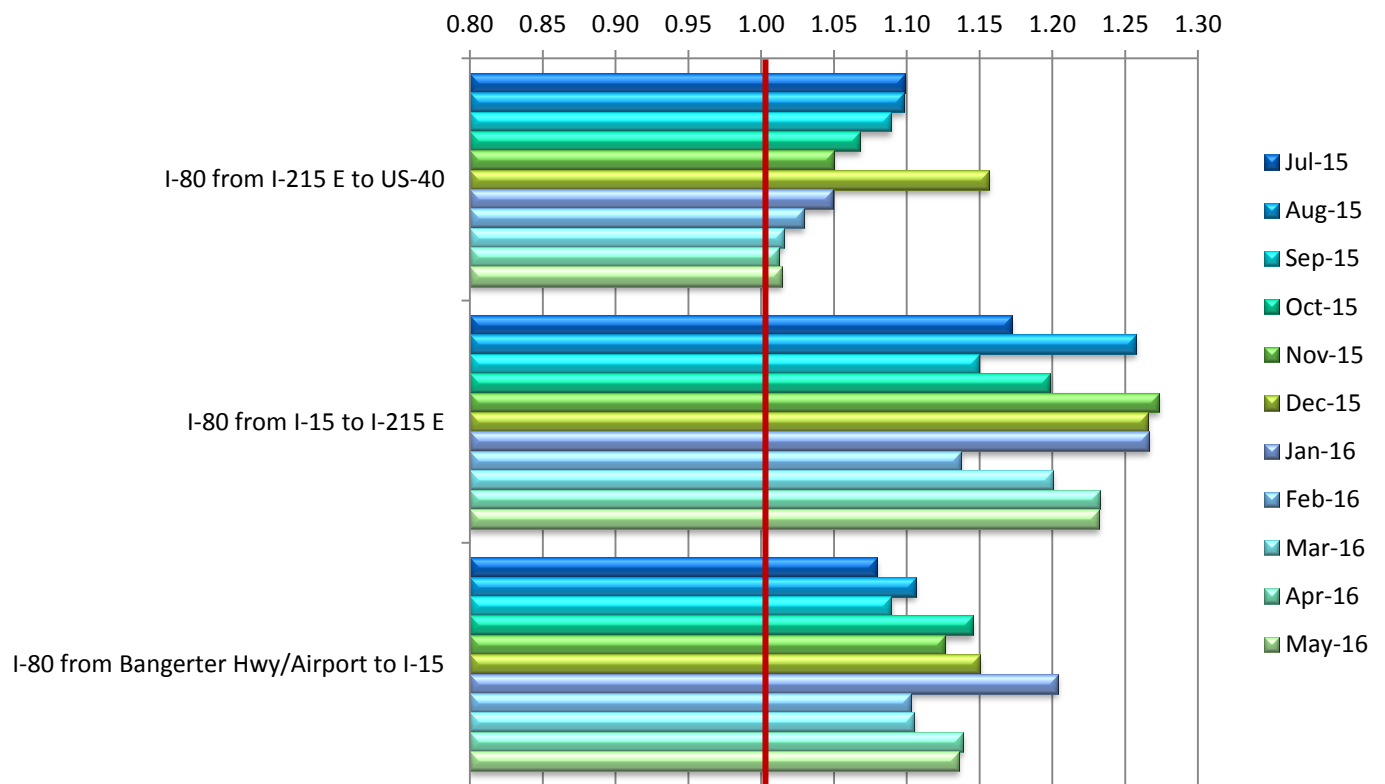
PM Peak Travel Time Index for I-15 FY 16



AM Peak Travel Time Index for I-80 FY 16

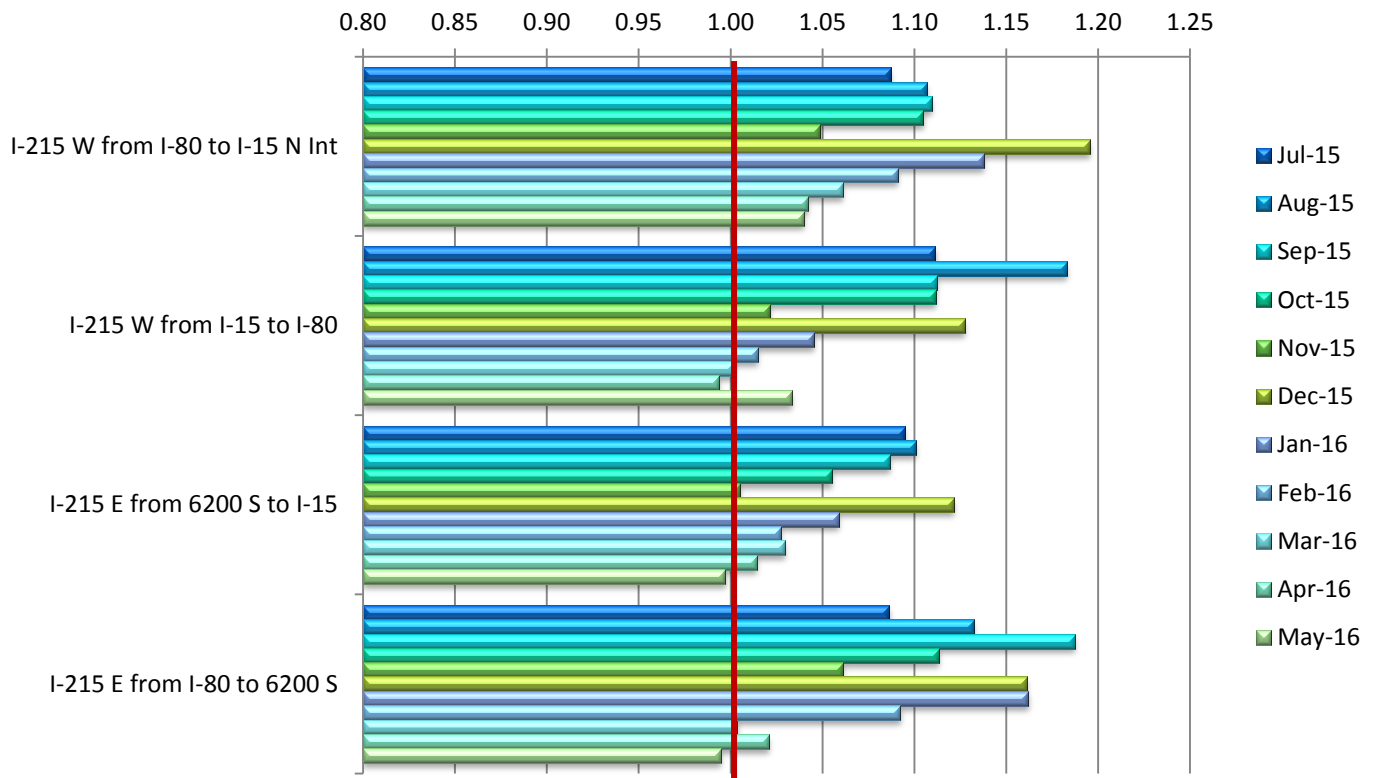


PM Peak Travel Time Index for I-80 FY 16

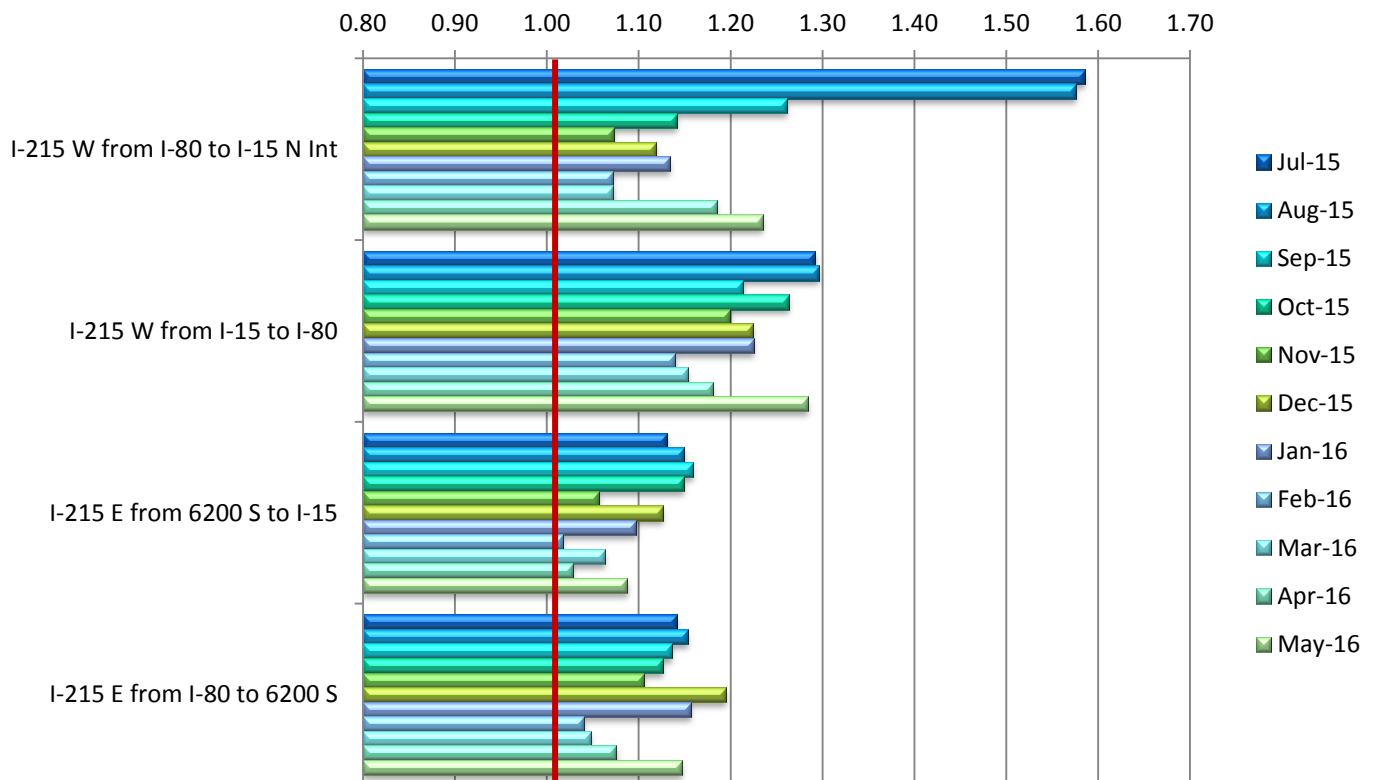


Freeway Traffic Level of Service

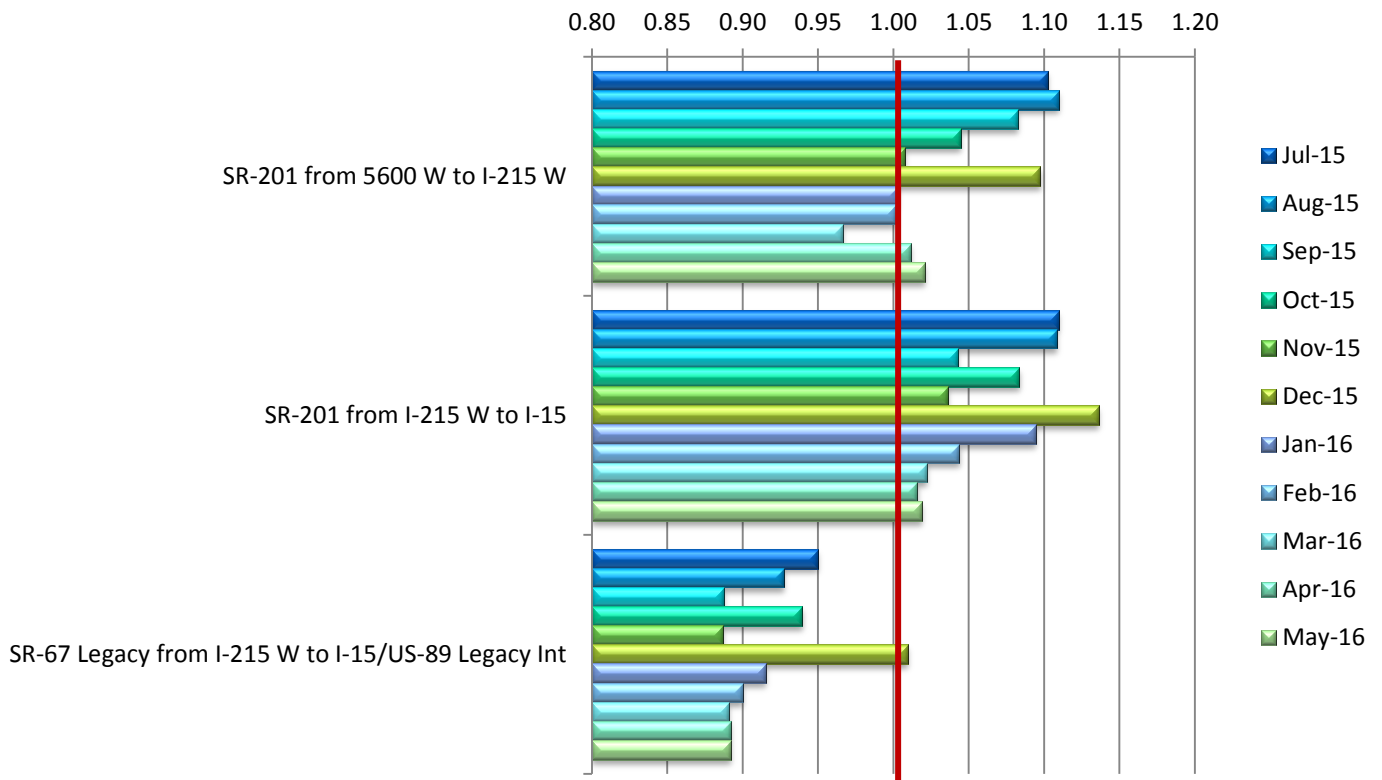
AM Peak Travel Time Index for I-215 FY 16



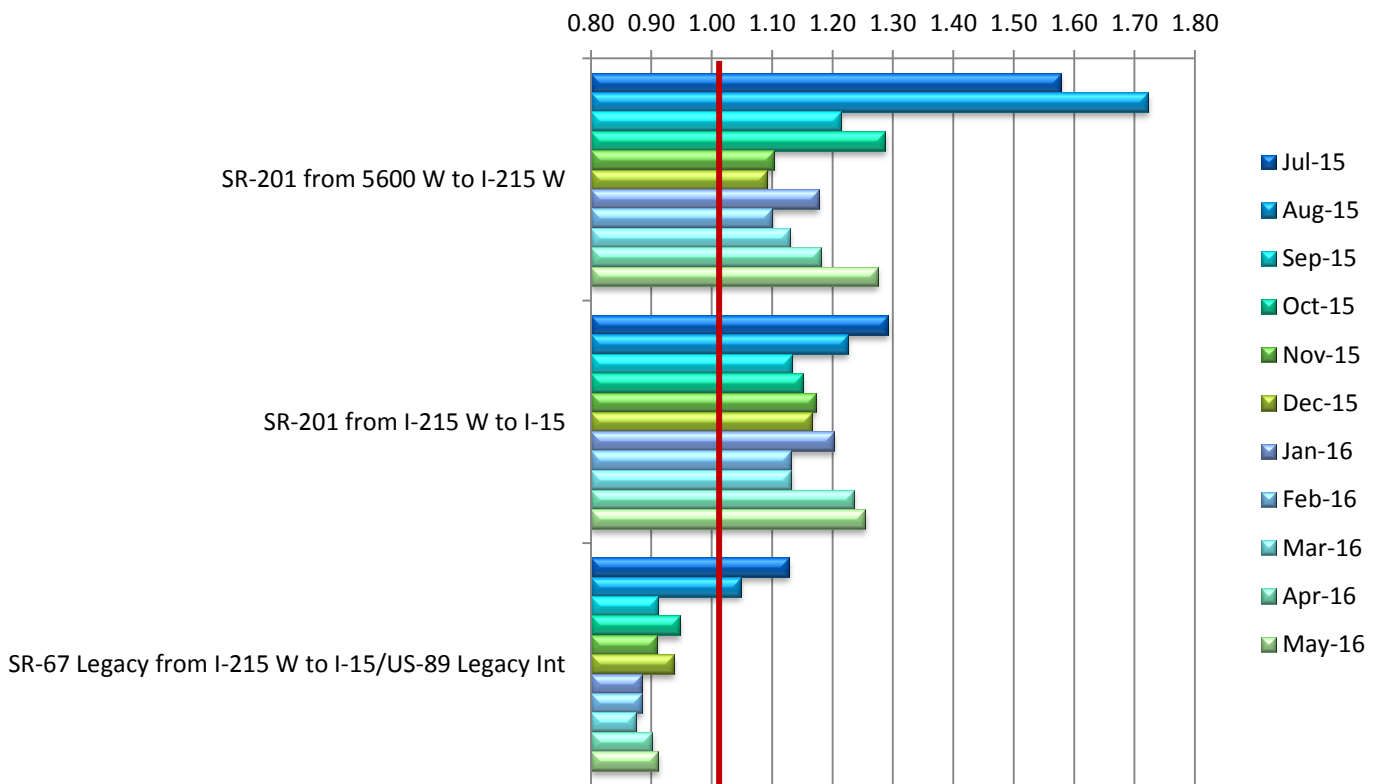
PM Peak Travel Time Index for I-215 FY 16



AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 16

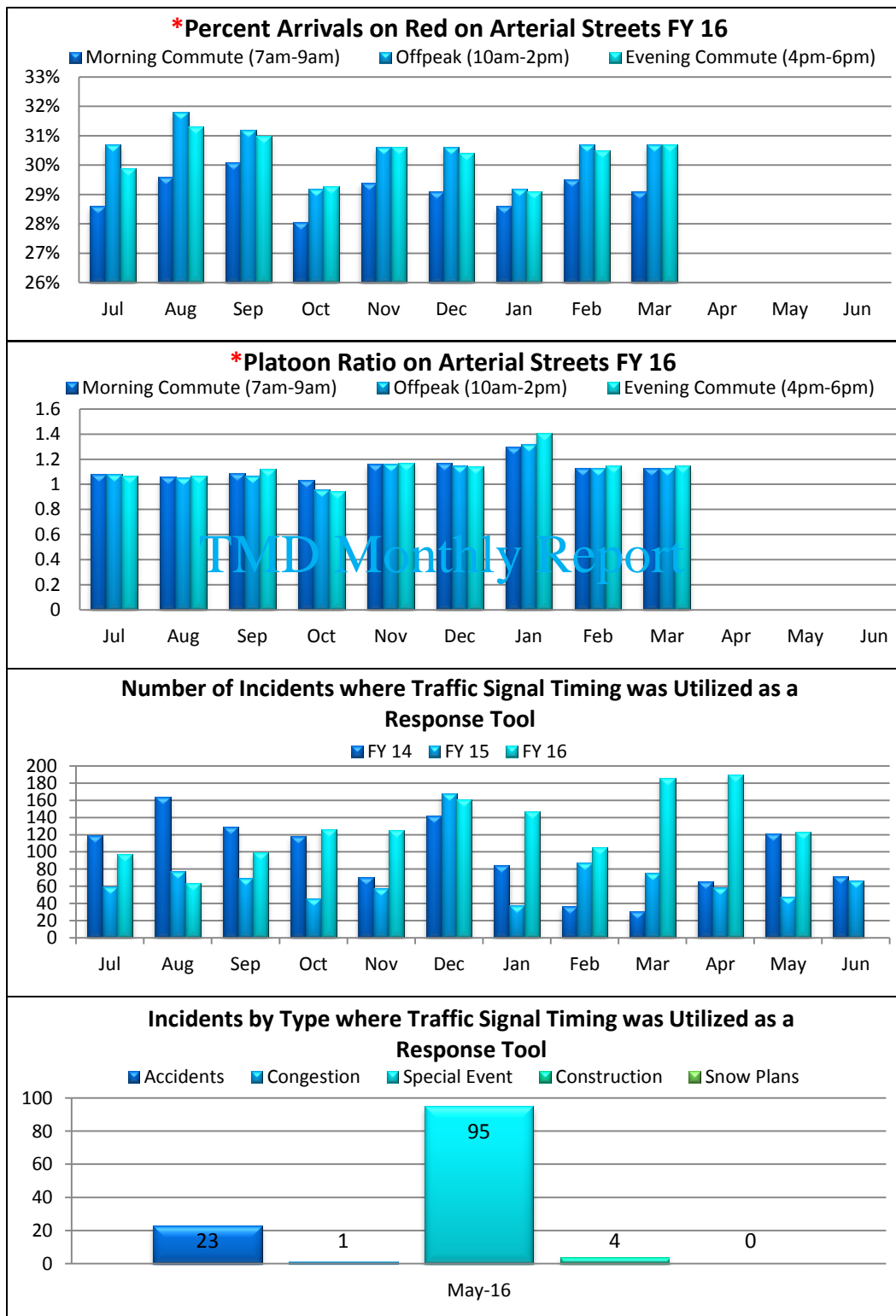


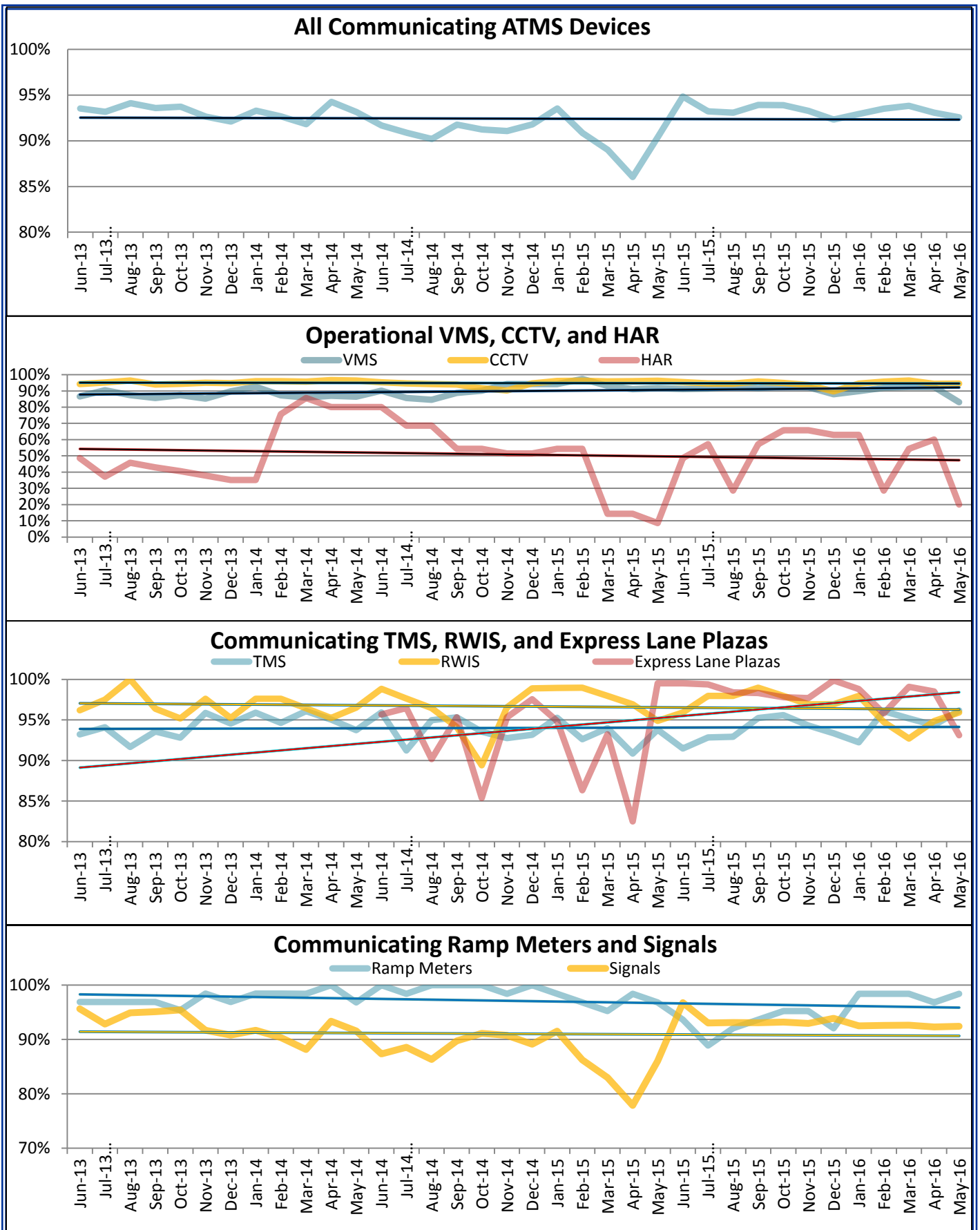
PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 16

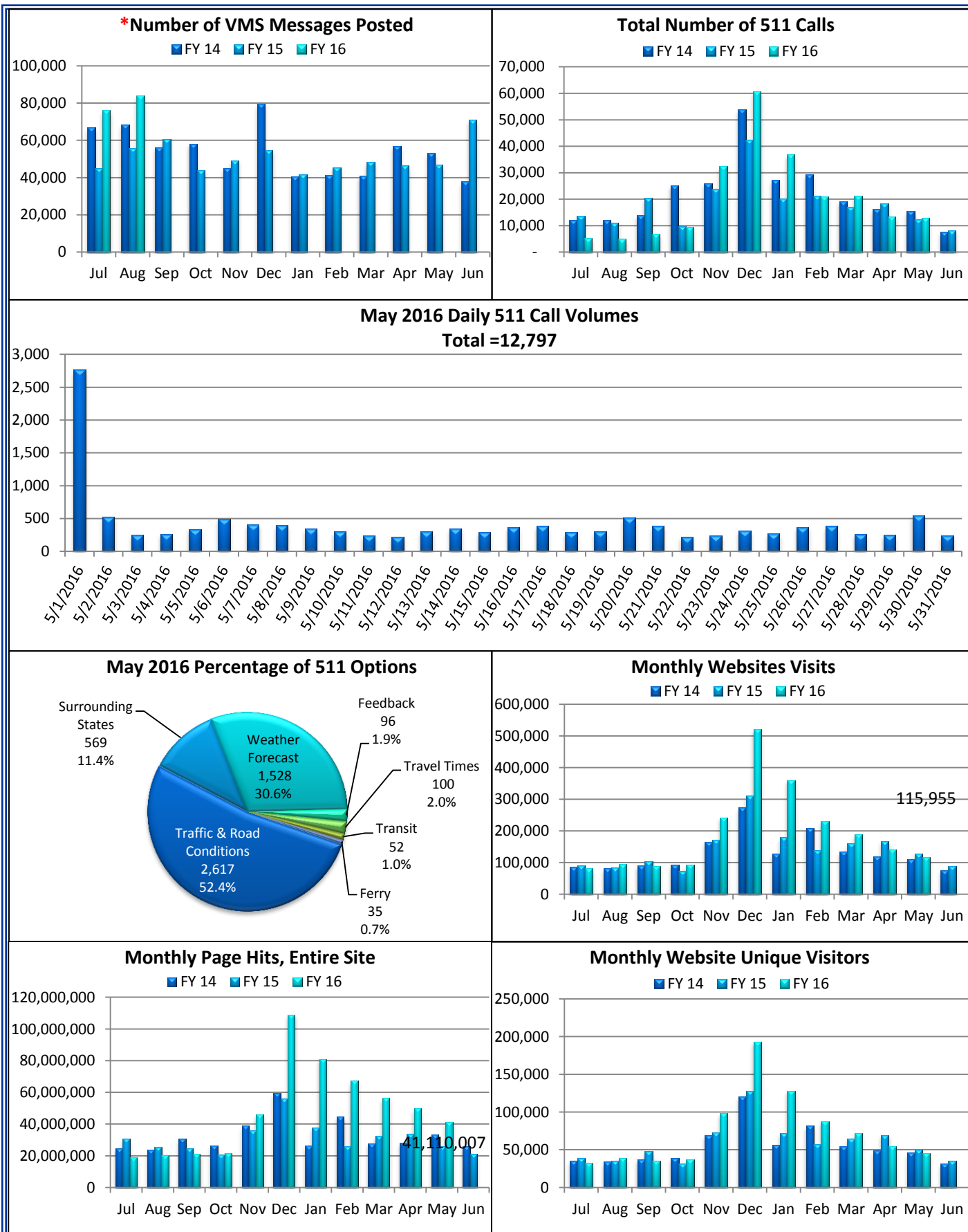


Arterial Traffic Level of Service * No Data Available Since March 2016

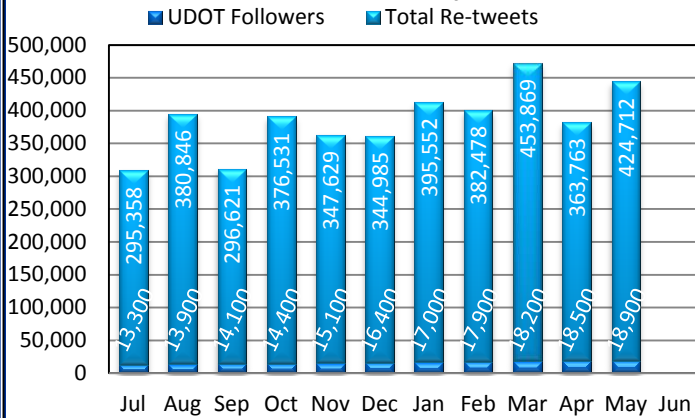
The percent arrival on red along the arterial statistics are generated automatically through the automated traffic signal performance measures, which show real-time and historical functionality at signalized intersections. The system automatically time-stamps when each vehicle arrives at the intersection and then compares the detection time-stamp if the phase was green or red. The percent arrival on red data is averaged over the 24 hours of the day and days in the month. . The lower charts shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.



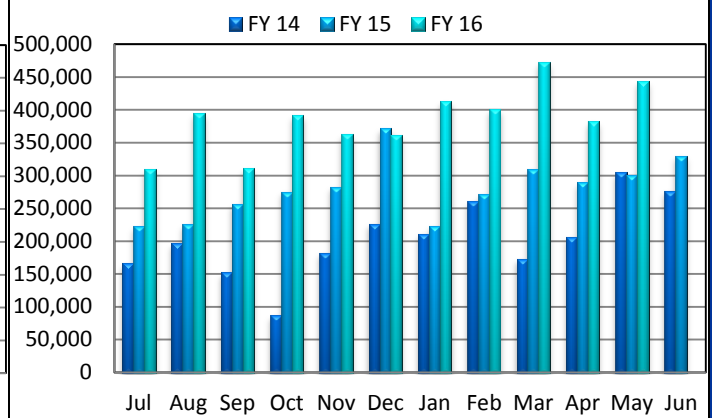




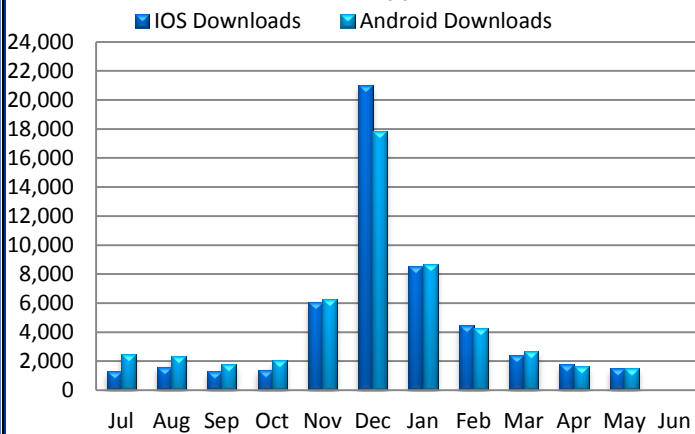
UDOT Traffic Twitter Activity - FY 16



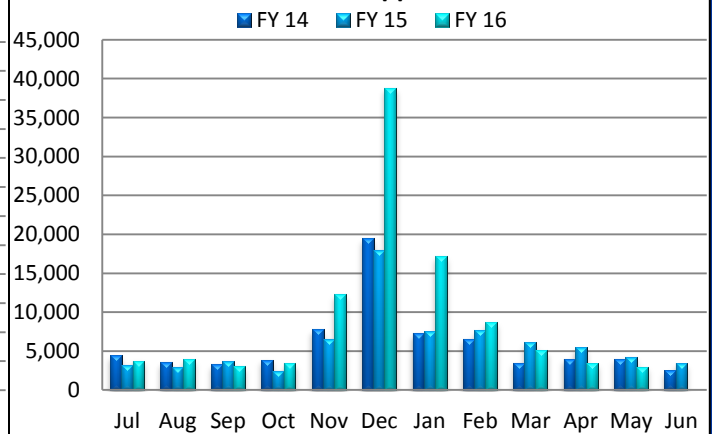
UDOT Traffic Followers and Re-tweets



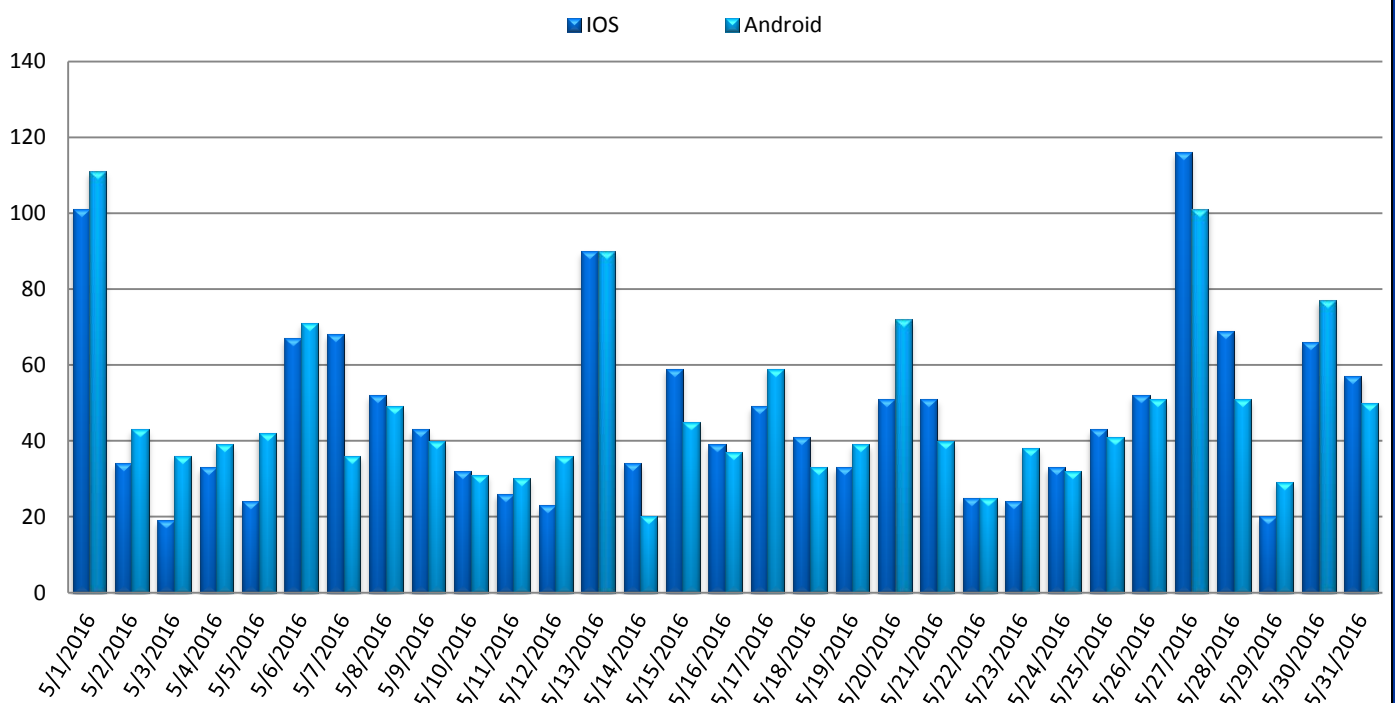
UDOT Traffic App - FY 16



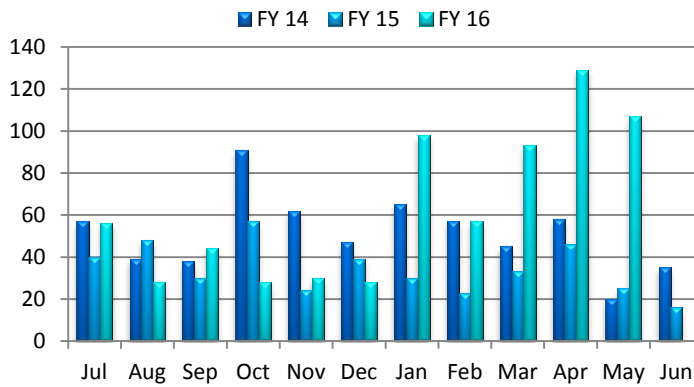
UDOT Traffic App Downloads



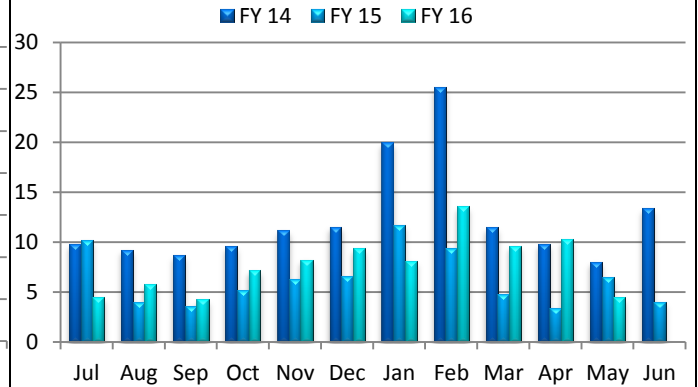
UDOT Traffic App Downloads - May 2016



Number of "Ask UDOT Traffic" Questions

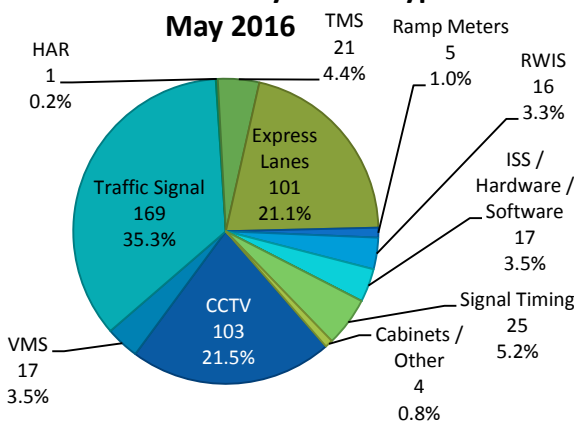


Overall Average Work Order Turnaround Days

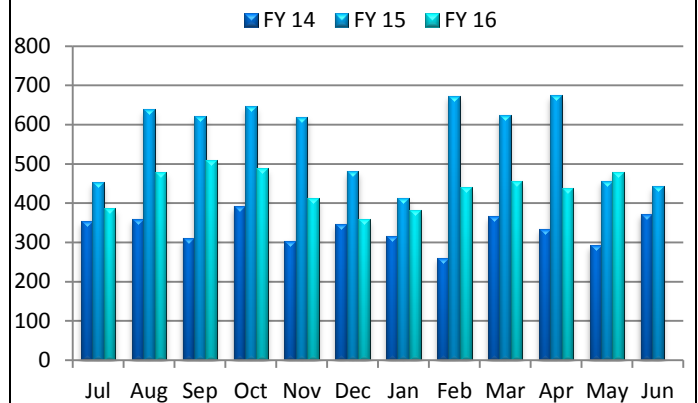


New Work Orders by Device Type

May 2016

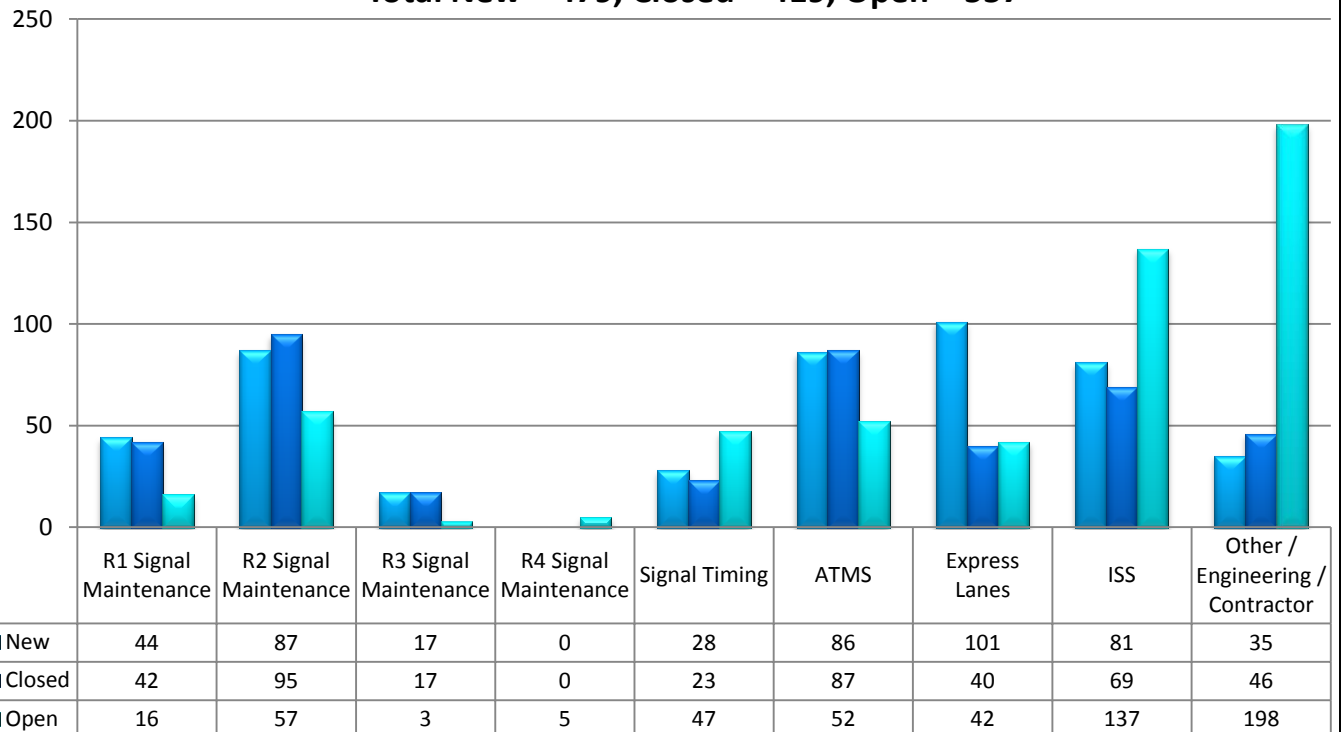


Number of New Work Orders



Work Order Statistics by Group - May 2016

Total New = 479, Closed = 419, Open = 557





CONTROL ROOM

The Control Room manager and operators have been testing a new Tran-Suite deployment that is scheduled for June. The new deployment will drastically change how the control room software is used to manage incidents and events.

May was a month of special events. The Control Room Team helped manage several large events, including bicycle road races, concerts, and exceptionally high visitor volumes to the five National Parks in Utah. National Park visitation will be higher than normal through the entire state as the US Park Service continues to celebrate the National Park Centennial.

The Operators helped manage 1100 incidents and fielded 140 phone calls as part of their normal duties.

The TOCL was only activated twice this month.



TRAVELER INFORMATION

The Traveler Information Group represented UDOT at a National Parks traffic management coordination meeting. Arches, Canyonlands, Capitol Reef, Bryce Canyon, and Zion National Parks were all represented to help plan for expected high park visitation due to the National Park Centennial. The group also represented UDOT at the Governor's Public Safety Summit Meeting, continued work on the 511 remodel project, and represented the Traffic Management Division at a UDOT coordination meeting with Traffic and Safety and Travel Wise.

WEATHER INFORMATION UDOT WEATHER GROUP

The Weather Group had 271 overall weather related interactions, 113 outgoing weather alerts, four NWS collaborations, and two road alerts.

Climatology

A variable weather pattern dominated the month of May, but mostly Northern and Eastern Utah saw above average precipitation, particularly in the Uinta Basin, with the rest of the state below average. Most of Utah experienced near-to-below normal temperatures, except for the Wasatch Front. Salt Lake International Airport was almost two degrees above average.

Weather Operations

The new RWIS vendor contract is being finalized with four different vendors.

A new RWIS in Provo Canyon, at about MP 8.9, came online.

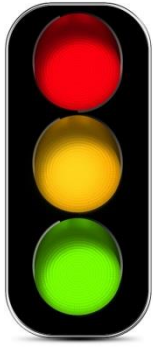
The Weather Group collaborated with University of Maryland – Amherst about trailer mounted non-invasive road sensors. The group presented at the UDOT PD Connect meeting about how UDOT project managers can access weather related information, and presented the latest Snow and Ice Performance Measure to the Ohio Department of Transportation. The group discussed possible improvements to last winter efforts with the National Weather Service. The group was featured in a KSL news story about efforts improving forecasting blowing dust along I-80 in the west deserts using soil moisture sensors.



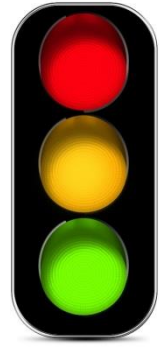
TRAFFIC OPERATIONS AND REPORTING

- ❖ National Park Visits.
- ❖ Governor's QT/OE metric.
- ❖ Four interchanges on Bangerter Highway.
- ❖ Congestion Reporting.
- ❖ TOC intro video.
- ❖ I-80/State Street EIS.
- ❖ TIRTL demonstration for Managed Motorways detection technology.
- ❖ I-80 corridor planning.
- ❖ Decoster training.
- ❖ American Fork Main Street operational improvements.
- ❖ I-215 I-80 to Redwood Road congestion analysis.
- ❖ I-15/9000 South interchange improvements.
- ❖ 4500 South 2700 West safety improvements.
- ❖ SR-9, Zion National Park entrance analysis.
- ❖ Measuring left turn arcs for yellow/red clearance intervals.
- ❖ Managed Motorways staffing requirements.
- ❖ Beck Street MOT.
- ❖ Memorial Day traffic observations at Zion's, Canyonlands, and Arches National Parks.





TRAFFIC SIGNAL OPERATIONS



Region 2

- ❖ Implemented peer-to-peer signal coordination at 3200 West SR-201.
- ❖ Rebuilt a fire station/pedestrian crossing at 5415 South 4420 West to a standard traffic signal.
- ❖ Installed radar detection on 4500/4700 South between 2500 West to 300 West.
- ❖ Added matrix detection to five additional intersections, providing additional data for the performance metrics effort.

Region 3

- ❖ Provided special timing plans for high school graduation at UVU and BYU.
- ❖ Adjusted signal timing and detection for Provo, Pleasant Grove and Spanish Fork construction projects.
- ❖ Installed several generator transfer switches.
- ❖ Worked with Region 4 to replace a signal cabinet in Hurricane.

Region 4

- ❖ Installed generator transfer switch in St. George.
- ❖ Assisted Washington City turning on a new traffic signal at Washington Fields Road and Industrial Drive.
- ❖ Relocated the meter pedestal at I-15 and Bluff Street that has been repeatedly knocked down.
- ❖ Replaced signal heads at 800 South Main Street in Cedar City.
- ❖ Installed matrix detection at two locations in Cedar City.

ATMS MAINTENANCE

Field Team

The Field Team shared lane closures with the Lab Team to perform LFOTs on TMS and CCTVs located on US6 at Center Street. While installing a new TMS device, another lane closure was shared on I-15 at Center Street. There was a failed CCTV lowering system, which was resolved by removing the lowering system and replacing the dome camera with a positioner camera 14 feet below the pole top. Crews can now access the camera using the boom-truck for maintenance and repair.

The Team joined Leon Hadley of the Fiber Group to temporarily restore power to HUB 2 and to replace a bad circuit breaker. Assistance was also given to the group to bring up a channel's redundant path allowing the contractor to splice the primary path. The team also replaced and reprogrammed the fiber switch.

The Field Team assisted Region 2 Signals to restore two critical intersections back to commercial power before the daily commute began. These two intersections were located at 4500 South 2300 East and 5400 South 3600 West.

The team made a trip to St. George to perform preventative maintenance on TMS devices and to fix several problems. In Region 4 the team worked directly with Diane Silcox to update two Sixnet modems for the VMS located on SR-276/ N of Hall Crossing SB at SR-95 and SR-276/S of Hall Crossing WB at SR-95. With the lighting crew the field team relocated a dry transformer from a lighting disconnect on the I-80 southbound ramp to I-215W southbound and redesigned the circuits so the transformer could be relocated to a nearby ATMS cabinet on I-80. The team closed 72 work orders this month and continued scheduled PMs.

Lab Team

Inclusive of Digi Terminal Servers, traffic signal controllers, 2070 controllers, wireless radio, Wavetronix radar and CCTV, a total of 24 devices were tested and repaired. One traffic signal was tested and burned in for a Region 2 spare cabinet and one traffic signal cabinet was released to Cache Valley Electric for 500 West 4800 South. A Daktronics Type 1 sign was uploaded and a 334 cabinet was released to Cache Valley Electric for the I-15 Springville VMS project. The team performed LFOTs on SR-201 at I-215, Bangerter, and 5600 West. The trial COHU Rise IP camera was returned to COHU for a firmware upgrade to solve some of the night time viewing issues.

The team members participated in a meeting to discuss implementation of the TIRTL laser detection system. The Lab installed a new Wavetronix sensor on I-15 and Center Street near MM 313.73 and provided assistance to Wavetronix in the installation of four test sensors in the Provo and American Fork area. Testing began on the Wavetronix firmware version 4.0 on I-15 at 9600 south for both the northbound and southbound lanes. There were 15 open work orders, 12 of which were on hold for loop replacements. The Electronics Lab closed nine work orders during the month of May.

ATMS MAINTENANCE

Express Lanes Team

The Express Lanes team closed 42 work orders while performing one system drive per week, taking approximately six plus hours each. The team repaired and programmed 36 controllers. They also rebooted one laser, one reader, two access points, and one VTMS. Three pucks were recalibrated and eight cabinets had preventative maintenance performed on them. The team rewired all CAT5 and LC power to one cabinet. Full lane closures were used to perform preventative maintenance five plazas. The team also installed four Ethernet relays. The Lab Group gave assistance in all of these efforts.



ITS STANDARDS & SPECIFICATIONS

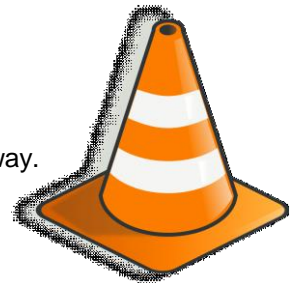
- ❖ An ATMS Standards and Specifications Package was sent to the Standards Section on May 18th. On May 25th it was determined that the Standards Section was unable to perform the “Pre-Review” according to normal procedures. The package was sent out for the coordination period to collect comments. The Standards Section added the caveat that the drawings and specifications had not been completely checked. The coordination period ends June 8 and comments will be collected and logged during June.
- ❖ Work continued on the revisions and updates for the 2017 edition by holding regular work group meetings with members of the TOC staff and Q/C team. All specifications and drawings will be examined in order to improve the ATMS construction.
- ❖ The second draft of the new 16530 Electrical Power standard arrived for review and comment. It was worked on until it could be submitted to the June 30 coordination period that started May 18.
- ❖ Work continued to revise the freeway management portion of the AT Series standard drawings.
- ❖ Work continued on the ATMS Solar Powered Site standards. General arrangements were examined and refinements under consideration.

Procurement

- ❖ Work continued on the new RWIS instrumentation contract bid documents.
- ❖ Research work continued by observing the performance of the COHU Hybrid camera.

REGION 1

- ❖ **Statewide Signal Interconnect:** PineTop Engineering has been working on the design for this to advertise.
- ❖ **SR-193 and Greyhawk:** Under construction.
- ❖ **SR-232 Hillfield Rd. Interchange:** Preliminary work has begun.
- ❖ **28th Street and Washington:** Under construction.
- ❖ **SR-126 & 1300 N:** Under construction.
- ❖ **I-15; SR-30 to the Idaho State line:** This project has been designed by PineTop Engineering and is ready to advertise. This project needs major funding for ATMS. This project may be part of a partnership with a telecom.
- ❖ **Layton Interchange:** This project is in design.
- ❖ **SR-127 & 3000 W:** Under construction.
- ❖ **US-89; Antelope Drive Extension:** This project is under construction.
- ❖ **Logan CCTV's:** This project has been completed and the 30 day burn in is underway.



REGION 2

- ❖ **Managed Motorway Detection – TIRTL Device Testing:** We have completed design for the test site. We have scheduled the vendor to install the TIRTL device in mid-June. We will initially test the device for 30 days this summer and we are preparing temporary power supply to support the test site on I-15 at 9600 South in Sandy.
- ❖ **I-15 Point Project:** The ATMS elements of the project are being prepared for the final installation configuration on the new system. They have been running the old system through the entire project. The old system will be shut off and switched to the new system this August.
- ❖ **I-215 West Reconstruction:** The I-215 West project will be re-installing two new variable message signs. One sign will be relocated to a more optimal location. During design, we identified two additional locations that need a VMS. These locations were incorporated into the sign spacing and ensured a preserved location so the future sign can be installed without conflict of existing highway infrastructure.
- ❖ **Salt Lake Valley Traffic Signal Interconnect:** Our design consultant, Horrocks, is reviewing the Salt Lake County maintained signals to see which one's could be connected through third party communication systems. Also, they will be recommending communication methods for all the remaining signals in Salt Lake County. Construction to connect the signals will begin later this year.

REGION 3

- ❖ **SR-92 CCTV/Hybrid VMS (12641):** Generated WTO to repair wind storm damage so we can restart the 30 day burn-in.
- ❖ **Region 3 traffic signal connections (12774):** SR-198 @ Woodland Hills + CCTV, SR-198 @ 400 North, and SR-198 @ Main St + CCTV in Salem via wireless radio connection. Ordered and received wireless radios.
- ❖ **US-40 CCTV/Signal connections (12805):** STRATA installed connection electronics to eight signals in the basin area. Vernal HUB equipment has been received. Installation scheduled in June.
- ❖ **Provo Canyon RWIS/VMS (11410):** RWIS installations under construction.
- ❖ **US-189; State Park to Rock Cut passing Lanes (11415):** Project under construction. Ordered ATMS state furnished materials.
- ❖ **Fiber connection to three Maintenance Sheds (13681):** Project completed.
- ❖ **Spanish Fork; SR-156; 300 South to M.P. 2 (9976):** Delivered ATMS state furnished materials.
- ❖ **Provo; SR-256; 800 East to Univ Ave BRT (10266):** ATMS design of micro fiber and two CCTV's ongoing. Ordered first round of ATMS state furnished materials.
- ❖ **Spanish Fork; Canyon Rd @ 2550 E Signal (10960):** Project under construction.
- ❖ **Provo; US-89 (300 S); 100 East to 700 East (10137):** Fiber redundancy path established so contractor can keep all devices operational during construction.
- ❖ **Heber; US-40; 250 South HAWK & 100 North Ped X-ing (14105):** Project complete.
- ❖ **Lindon; US-89 @ Center St. (12839):** Started 30 day burn-in.
- ❖ **Ut. Co. Signal Interconnect (13244):** Coordination problems with Spanish Fork and American Fork Cities has pushed PS&E into June.
- ❖ **Eagle Mountain; SR-73 @ Mt. Airey Dr. (14163):** Project complete.
- ❖ **Eagle Mountain; SR-73 @ Sunset Dr. (13217):** Waiting on power resource.
- ❖ **I-15 Fiber; Payson to Santaquin (14149):** Put design contract on hold to evaluate project budget.
- ❖ **Pleasant Grove; US-89 @ 200/220 South (14683):** Held kickoff/scoping meeting.

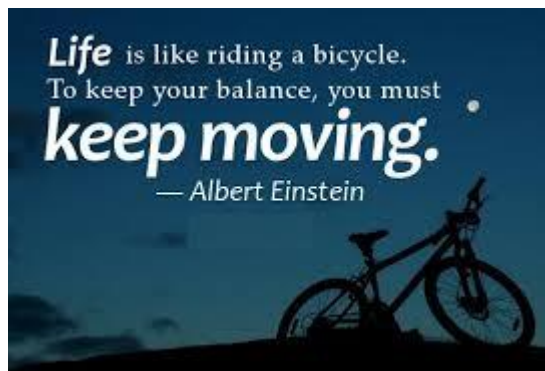
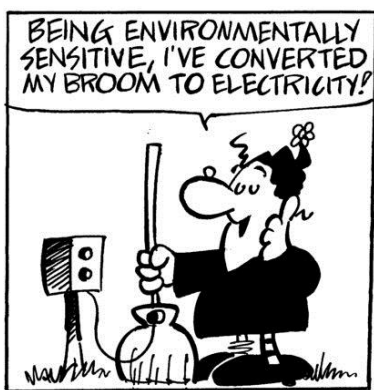


REGION 4

- ❖ **St. George:** This project is complete, except for some city and UDOT fiber coordination.
- ❖ **Pine Creek Truck Climbing Lane:** This project is nearly complete.
- ❖ **Fiber upgrade for US-6, Helper and Price Signal Integration:** Telecom work has been completed. UDOT is ready to complete the final contractor package for a procurement contract. The package is ready and meetings with Region 4 staff have been scheduled to make sure all certifications and checklists have been satisfied.
- ❖ **Beaver Truck Climbing Lane:** Project is under construction.
- ❖ **I-15; North Beaver to Manderfield:** This project is complete. Solar sites and CCTV locations to be re-located are being mitigated.
- ❖ **Cedar City Fiber:** We have re-bid this project. Cache Valley Electric has been awarded the project.
- ❖ **Price, Helper fiber and Interconnect:** This project has been completed.
- ❖ **Beaver Shed and Fiber HUB:** We have received bids from three contractors and have awarded the contract to Hidden Peak Electric.



Text



Acronyms

CCTV	Closed Circuit Television	DPS	Department of Public Safety
EIS	Emergency Information System	HAR	Highway Advisory Radio
I2TMS	Integrated Interagency Traffic Management System		
ITS	Intelligent Transportation System	LFOT	Local Field Operations Test
MIC	Manager in Charge	MOT	Maintenance of Traffic
RWIS	Road-Weather Information System	TAC	Technical Advisory Committee
TMD	Traffic Management Division	TMS	Traffic Monitoring Station
TOC	Traffic Operations Center	VMS	Variable Message Sign

